30 N. Gould Street, Suite 7491
Sheridan, WY 82801
Toll Free +1 (888) 465-8038

Cylinder Borescope Inspection Checklist

(Rev. 1.1)

This checklist documents the standard cylinder borescope inspection protocol recommended by Savvy, and includes the standard file naming convention to facilitate easy bulk uploading of borescope images to the borescope image repository on Savvy's platform. The standard protocol calls for capturing a sequence of 11 specific images of each cylinder.

Aircraft Registration: _____ **Owner:** _____

Aircraft Year/Make/Model/SN: _____

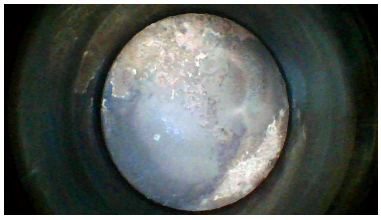
Engine Make/Model/SN: _____

Engine Location: □ front □ back □ left □ right

Cylinder: □ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □7 □ 8 □ 9

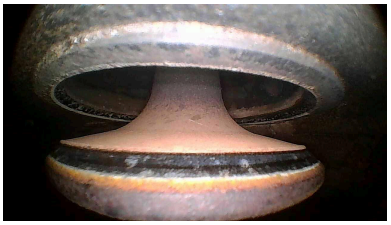
We recommend that the 11 images for each cylinder be taken in the following sequence.

1. □ **Piston Crown View**
   (piston-crown)
   Capture an image of the entire piston crown. Position piston at bottom-dead-center and position borescope camera just inside the top spark plug boss with the articulating tip set to 0° (straight ahead).



2. □ **Exhaust Valve—Head View**
   (exhaust-valve-head)
   Capture an image of the entire exhaust valve face. Position piston at bottom-dead-center and position borescope camera near piston crown with the articulating tip set to roughly 180° (looking toward cylinder head).

3. □ **Exhaust Valve—Seat+Face View**
   (exhaust-valve-seat)
   Capture an image of the exhaust valve seat and valve face (sealing surface). Position crankshaft so exhaust valve is fully open and position borescope camera just inside top spark plug boss with the articulating tip set to roughly 90° (looking sideways toward edge of open valve).



4. □ **Exhaust Valve—Stem+Guide View**
   (exhaust-valve-stem)
   Capture an image of the exhaust valve stem and guide. Position crankshaft so exhaust valve is fully open and position borescope camera between the open valve and the seat with the articulating tip set to roughly 120° to 150° (looking up through the seat toward the valve stem where it exits the valve guide).

5. □ **Intake Valve—Head View**
(intake-valve-head)
Capture an image of the entire intake valve head. Position piston at bottom-dead-center and position borescope camera near piston crown with the articulating tip set to roughly 180° (looking toward cylinder head).

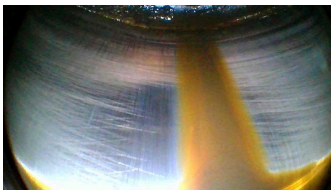
6. □ **Intake Valve—Seat+Face View**
(intake-valve-seat)
Capture an image of the intake valve seat and valve head (sealing surface. Position crankshaft so intake valve is fully open and position borescope camera just inside top spark plug boss with the articulating tip set to roughly 90° (looking sideways toward edge of open valve.

7. □ **Intake Valve—Stem+Guide View**
(intake-valve-stem)
Capture an image of the intake valve stem and guide. Position crankshaft so intake valve is fully open and position borescope camera between the open valve and the seat with the articulating tip set to roughly 120° to 150° (looking up through the seat toward the valve stem where it exits the valve guide).

8. □ **Cylinder Wall—12 O'Clock View**
(cylinder-wall-12)
Capture an image of the cylinder barrel wall looking toward the 12 o'clock position (up). Position piston at bottom-dead-center and position borescope camera near the 6 o'clock position (down) with the articulating tip set to roughly 90° (looking up toward the 12 o'clock position of the cylinder barrel). Fine-tune camera position and tip angle for optimum focus and minimum reflections.

9. □ **Cylinder Wall—3 O'Clock View**
(cylinder-wall-3)
Capture an image of the cylinder barrel wall looking toward the 3 o'clock position (right). Position piston at bottom-dead-center and position borescope camera near the 9 o'clock position (left) with the articulating tip set to roughly 90° (looking right toward the 3 o'clock position of the cylinder barrel). Fine-tune camera position and tip angle for optimum focus and minimum reflections.

10. □ **Cylinder Wall—6 O'Clock View**
(cylinder-wall-6)
Capture an image of the cylinder barrel wall looking toward the 6 o'clock position (down). Position piston at bottom-dead-center and position borescope camera near the 12 o'clock position (up) with the articulating tip set to roughly 90° (looking down toward the 6 o'clock position of the cylinder barrel). Fine-tune camera position and tip angle for optimum focus and minimum reflections.



11. □ **Cylinder Wall—9 O'Clock View**
(cylinder-wall-9)
Capture an image of the cylinder barrel wall looking toward the 12 o'clock position (left). Position piston at bottom-dead-center and position borescope camera near the 3 o'clock position (right) with the articulating tip set to roughly 90° (looking left toward the 9 o'clock position of the cylinder barrel). Fine-tune camera position and tip angle for optimum focus and minimum reflections.

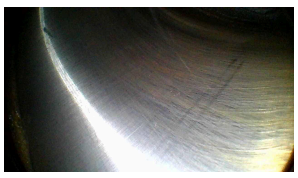


Image File Naming Convention

To facilitate bulk uploading of borescope images to the borescope image repository on the Savvy platform, the file names of your borescope images should conform to the following naming convention:

<cylinder >-<view>-<date>.<extension>

where

<cylinder> = digit 1-9

<view> =

- piston-crown
- exhaust-valve-head
- exhaust-valve-seat
- exhaust-valve-stem
- intake-valve-head
- intake-valve-seat
- intake-valve-stem
- cylinder-wall-12
- cylinder-wall-3
- cylinder-wall-6
- cylinder-wall-9

NOTE: These view names may be abbreviated to piston, exh-head, exh-seat, exh-stem, int-head, int-seat, int-stem, wall-12, wall-3, wall-6, and wall-9. However, the longer forms are preferred for human readability.

<date> = image date in format **YYYYMMDD** (defaults to upload date if omitted)

<extension> = image type (.jpg, .png, etc.)

EXAMPLES:

> **1-piston-crown-20240315.png** is the "piston crown" view for cylinder #1 taken 03/15/2024.
>
> **2-cylinder-wall-9-20240315.jpg** is the "cylinder wall 9 o'clock position" for cylinder #2 taken on 03/15/2024.
>
> **3-exhaust-valve-head.jpg** is the "exhaust valve head" view for cylinder #3 (undated).
>
> **3-exh-head.jpg** is the same as the previous example but in abbreviated format.